



DER Functions Testing Plan

June 21, 2013

2 – 3 pm

Testing Plans

- **External product testing** to provide independent assessment of product capabilities and conformance to specifications.
 - Testing could be done by NREL, SunSpec Alliance, TÜV Rhineland, DOE SunShot, or other testing facility.
 - Combinations of these testing facilities could be used, depending upon the purposes of the testing
- **Utility-specific product testing:** Utilities will specify both general and utility-specific requirements, with testing before and/or during implementation.
- **Commissioning and site acceptance testing:** Utilities will observe site testing or receive confirmation of site testing results

Sources of Testing Plan

- IEEE 1547.1 for basic tests, but does not cover new functions
- Planned updates to IEEE 1547.1a, but these are permissive, not actual requirements
- Sandia draft functional tests of IEC 61850-90-7 functions
- SunSpec Alliance and TÜV Rhineland tests
- Still need additional efforts for developing the tests for all Phase 1 functions
- Phase 2 communications testing will need to be added

Proposed Phase 1 Timeline

#	Utility Steps for Implementation of DER Functions	Timeframe
1	Utilities develop specifications for the mandatory and recommended smart DER functions in the CPUC Rule 21 that are based upon the smart inverter working group recommendations.	By Sept, 2013
2	Utilities develop their own Test Plan, or utilize a jointly developed Test Plan that covers all of the smart DER functions. These Test Plans could include phasing of functions to be tested, any utility-specific requirements, and the detailed testing procedures. Test plans must be submitted to the CPUC and posted for comment on their website.	By Sept, 2013
3a	Utilities require the commencement of the initial external manufacturing product testing of the autonomous smart DER functions. This product testing covers the specified DER functions using default settings.	By Dec, 2013
4a	Utilities require the commencement of utility-specific production testing of the autonomous smart DER functions.	By Mar, 2014
5a	Utilities commence the installation of tested DER systems with autonomous functions in pilot or experimental settings.	By Jun, 2014
6a	Utilities commission the pilot smart DER systems with autonomous functions after site acceptance testing.	By Sept, 2014